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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/788,755	02/27/2004	George Douglas Meegan JR.	82274.95	9281

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EXAMINER
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HOPKINS, ROBERT A

ART UNIT	PAPER NUMBER
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1724

DATE MAILED: 08/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/788,755

Applicant(s)

MEEGAN, GEORGE DOUGLAS

Examiner

Robert A. Hopkins

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 August 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-88 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-88 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-88 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention. Amended claims 1,21,43,52,59,66, 83, and dependant claims 5,12,13,24,25-28, all recite that a modulated acoustic field is without reliance on a fluid or gas or exhaust. Examiner respectfully submits that the amended limitations are not included in the original specification, and are applied only to overcome the prior art reference cited, and therefore the limitations fail to comply with the written description requirement. Also See MPEP 2173.05(i) which states "Any claim containing a negative limitation which does not have basis in the original disclosure should be rejected under 35 U.S.C. 112 first paragraph, as failing to comply with the written description requirement".

Examiner notes on page 8 lines 14-24 of the current specification, the acoustic agglomerator is defined as a mechanical oscillator. Examiner notes that amending the above recited independent claims to recite an mechanical oscillator which provides a modulated acoustic field applied to a fluid would overcome the structure and method of

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Bodai. Also, although Scott and Dudgeon et al provide for a mechanical oscillator, the mechanical oscillator of Scott and Dudgeon et al produce only a single frequency, and it would not be obvious to combine a mechanical oscillator with the teachings of Bodai, which provides for a non-mechanical sonic generator which operates by vortex generation.

Claims which are dependant on independent claims 1,21,43,52,59,66, and 83 are also rejected.

Examiner also notes the claim rejections over prior art in the current office action are based on limitations of the claims which exclude the amended limitations, wherein the amended limitations were determined by examiner to fail to meet the written description requirement.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-12,14 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Bodai et al(4253508).

Bodai et al teaches an acoustic agglomerator for agglomerating constituents comprising an acoustic generator(30; column 5 lines 20-25) configured to communicate with an area(space 38) containing a fluid(smoke) having constituents, wherein the acoustic generator is operable to generate a frequency modulated acoustic field to

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enhance agglomeration of the constituents in the fluid. Examiner notes the use of the term "spectrum of ultrasonic frequencies", and also notes Bodai(4347983) which references Bodai et al(4253508) and uses the terminology frequency modulated and amplitude modulated.

Bodai et al further teaches a second acoustic generator(figure 4;column 8 lines 13-25) operable to generate a second acoustic field to enhance agglomeration of the constituents in the fluid. Bodai et al further teaches wherein the second acoustic field is modulated, and wherein the second acoustic field is amplitude modulated, and wherein the second acoustic field is frequency modulated. Bodai et al further teaches wherein the acoustic generator frequency modulates the acoustic field relative to a first frequency and the second acoustic generator frequency modulates the second acoustic field relative to a second frequency. Bodai et al further teaches wherein the acoustic generator amplitude modulates the acoustic field and the second acoustic generator amplitude modulates the second acoustic field. Bodai et al further teaches wherein the second acoustic field is frequency and amplitude modulated. Bodai et al further teaches a plurality of acoustic generators operable to enhance agglomeration of the constituents in the fluid. Bodai et al further teaches wherein the particle collection device is a filter.

Claims 21-27 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Bodai et al(4253508).

Bodai et al teaches an acoustic agglomerator for agglomerating constituents comprising an acoustic generator(30; column 5 lines 20-25) configured to communicate with an area(space 38) containing a gas(smoke) having constituents, wherein the

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acoustic generator is operable to generate a modulated acoustic field to enhance agglomeration of the constituents in the gas. Bodai et al further teaches wherein the acoustic generator can generate an amplitude modulated acoustic field. Bodai et al further teaches wherein the acoustic generator can generate a frequency modulated acoustic field. Bodai et al further teaches a second acoustic generator (figure 4; column 8 lines 13-25) operable to generate a second acoustic field to enhance agglomeration of the constituents in the gas. Bodai et al further teaches a plurality of acoustic generators operable to enhance agglomeration of the constituents in the gas.

Claims 43-46, 50, 51 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Scott (3771286).

Scott teaches an acoustic agglomerator for agglomerating constituents comprising an acoustic generator (14, 18) configured to communicate with a fluid having constituents, wherein the fluid is in an open area (column 1 lines 12-15), and the acoustic generator is operable to generate an acoustic field to enhance agglomeration of the constituents in the fluid in the open area. Scott further teaches wherein at least a portion of the constituents are a biohazardous material. Scott further teaches wherein at least a portion of the constituents are chemicals. Scott further teaches wherein the open area is within a building.

Claims 52 and 56-58 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Scott (3771286).

Scott teaches an acoustic agglomerator for agglomerating constituents comprising an acoustic generator (14, 18) configured to communicate with an exhaust of

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a vehicle having constituents(transportation systems; column 1 line 14), wherein the acoustic generator is operable to generate an acoustic field to enhance agglomeration of the constituents in the exhaust. Scott further teaches wherein the exhaust includes combustion exhaust gas.

Claims 59-62 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Scott(3771286).

Scott teaches an acoustic agglomerator for agglomerating constituents comprising an acoustic generator(14,18) configured to communicate with an area with a fluid flow having constituents wherein the acoustic generator is operable to generate an acoustic field to enhance agglomeration of the constituents in the area, and the acoustic generator applies the acoustic field to the area at an angle arbitrary to a direction of the fluid flow. Scott further teaches wherein the fluid flow includes combustion gas particulate.

Claims 66-69, and 82 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Dudgeon et al(4307964).

Dudgeon et al teaches an acoustic agglomerator for agglomerating constituents comprising an acoustic generator(18) configured to communicate with an area containing a fluid with constituents, wherein the acoustic generator is operable to generate an acoustic field to enhance agglomeration of the constituents in the area, and a system operable to determine information about the constituents in the area, wherein the acoustic generator can modify the acoustic field in response to the information(column 2 lines 39-52). Dudgeon et al further teaches wherein the system

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includes an opacity detector. Dudgeon et al further teaches wherein the system includes a particulate analyzer. Dudgeon et al further teaches wherein the modification to the acoustic field is a modification to the frequency of the acoustic field(column 7 lines 35-38). Dudgeon et al further teaches wherein the modification to the acoustic field is a modification to the amplitude of the acoustic field(column 7 lines 35-38).

Claims 83,87,88 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Dudgeon et al(4307964).

Dudgeon et al teaches a method of decreasing the frequency of cleaning a filtration device comprising providing a filtration device, operable to filter a fluid stream having constituents, applying an acoustic field to the fluid stream at a point upstream of the filtration device , wherein the acoustic field enhances an agglomeration of the constituents(column 2 lines 49-52). Dudgeon et al further teaches wherein the acoustic field is a sinusoidal sound field, and a periodic sound field.

Claims 83-88 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Bodai et al(4253508).

Bodai et al teaches a method of decreasing the frequency of cleaning a filtration device comprising providing a filtration device, operable to filter a fluid stream having constituents, applying an acoustic field to the fluid stream at a point upstream of the filtration device , wherein the acoustic field enhances an agglomeration of the constituents. Bodai et al further teaches wherein the acoustic field is frequency and amplitude modulated. Bodai et al further teaches wherein the acoustic field is a sinusoidal sound field, and a periodic sound field.



***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 47-49 and 53-55 and 63-65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scott(3771286) taken together with Bodai et al(4253508) .

Scott teaches all of the limitations of claims 47-49,53-55,63-65 but is silent as to wherein the acoustic generator can modulate the amplitude of the acoustic field or modulate the frequency of the acoustic field. Bodai et al teaches an acoustic agglomerator for agglomerating constituents comprising an acoustic generator(30; column 5 lines 20-25) configured to communicate with an area(space 38) containing a fluid(smoke) having constituents, wherein the acoustic generator is operable to generate a frequency and amplitude modulated acoustic field to enhance agglomeration of the constituents in the fluid. It would have been obvious to someone of ordinary skill in the art at the time of the invention to provide a acoustic generator is operable to generate a frequency and amplitude modulated acoustic field in order to provide more frequent collisions of particles and improve the coagulation process(column 4 lines 47-53 of Bodai et al).

Claims 70-81 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dudgeon et al(4307964) taken together with Bodai et al(4253508).

Dudgeon et al teaches all of the limitations of claims 70-81 but is silent as to wherein the modification to the acoustic field is a modulation of the acoustic field. Bodai et al teaches an acoustic agglomerator for agglomerating constituents comprising an acoustic generator(30; column 5 lines 20-25) configured to communicate with an area(space 38) containing a fluid(smoke) having constituents, wherein the acoustic generator is operable to generate a frequency and amplitude modulated acoustic field to enhance agglomeration of the constituents in the fluid. It would have been obvious to someone of ordinary skill in the art at the time of the invention to provide an acoustic generator to provide a modulation of the acoustic field to generate a frequency and amplitude modulated acoustic field in order to provide more frequent collisions of particles and improve the coagulation process(column 4 lines 47-53 of Bodai et al).

Claims 1,3,4,14-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dudgeon et al(4307964) taken together with Bodai et al(4253508).

Dudgeon et al teaches an acoustic agglomerator for agglomerating constituents comprising an acoustic generator configured to communicate with an area containing a fluid having constituents, wherein the acoustic generator is operable to generate an acoustic field to enhance agglomeration of the constituents in the fluid. Dudgeon is silent as to a frequency modulated acoustic field. Bodai et al teaches an acoustic agglomerator for agglomerating constituents comprising an acoustic generator(30; column 5 lines 20-25) configured to communicate with an area(space 38) containing a fluid(smoke) having constituents, wherein the acoustic generator is operable to generate a frequency modulated acoustic field to enhance agglomeration of the

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constituents in the fluid. It would have been obvious to someone of ordinary skill in the art at the time of the invention to provide an acoustic generator to provide a modulation of the acoustic field to generate a frequency and amplitude modulated acoustic field in order to provide more frequent collisions of particles and improve the coagulation process(column 4 lines 47-53 of Bodai et al).

Dudgeon et al further teaches wherein the particle collection device is a filter, an electrostatic precipitator, a baghouse, a cyclone separator, or a gravitational settling chamber(column 2 lines 49-52).

#### ***Allowable Subject Matter***

Claims 13,28-42 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 13 recites "a plurality of acoustic generators operable to generate a uniform modulated acoustic field along the length of the exhaust duct to enhance agglomeration of the constituents in the fluid". Bodai et al , Scott, and Dudgeon et al fails to teach an exhaust duct and a plurality of acoustic generators operable to generate a uniform modulated acoustic field along the length of the exhaust duct. Claims 28-42 depend on claim 13 and hence would also be allowable upon incorporation of claim 13 into claim 1.

#### ***Response to Arguments***

Applicant's arguments with respect to claims 1-88 have been considered but are moot in view of the new grounds of rejection.

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Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

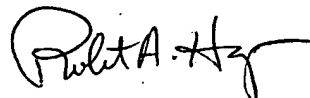
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert A. Hopkins whose telephone number is 571-272-1159. The examiner can normally be reached on Monday-Friday, 7am-4pm, alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on 571-272-1166. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Rah  
August 25, 2005

  
ROBERT A. HOPKINS  
PRIMARY EXAMINER  
A.U. 1724